Issue 59

Solar Energy

The energy of the sunlight falling on the roof and sides of your car on a sunny day is almost as great as the energy delivered by the engine! And it's free!

The yearly average of sunlight on a horizontal surface when the sun is shining is:

Connecticut 0.2 hp/m^2
New Mexico 0.3 hp/m^2

At 96 km/hr (60 mi/hr), an ordinary car engine doing 13 km/liter (30 mi/gal) consumes energy at the rate of 100,000 W (watts) (134 hp [horsepower]), turning 80,000 W (107 hp) into wasted heat and 20,000 W (27 hp) into mechanical work.

What are the prospects of a gasless car running successfully in New Mexico? In Connecticut? If it could run, why isn't such a car in general use?

(A car that drove across Australia on solar energy is described in "Fill 'er Up with Sunlight," W. H. Jordan, *Smithsonian,* Feb. 1988 and "The Lessons of Sunraycer," H. G. Wilson, P. B. MacCready, and C. R. Kyle, *Scientific American,* March 1989.)